



IFW

PATENT APPLICATION

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of

Docket No: Q92714

Hiroshi KANETA

Appln. No.: 10/565,823

Group Art Unit: 1745

Confirmation No.: 9638

Examiner: Not Yet Assigned

Filed: January 25, 2006

For: LITHIUM ION SECONDARY BATTERY

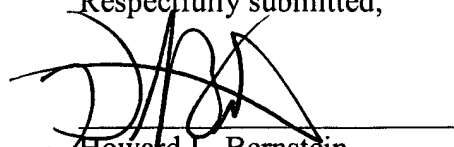
SUBMISSION OF INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

For the Examiner's convenience, enclosed herewith is a copy of the English translation of the International Preliminary Report on Patentability (IPRP). It is assumed that copies of the cited references as required by §371(c) will be supplied directly by the International Bureau, but if further copies are needed, the undersigned will undertake to provide them upon request.

Respectfully submitted,


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WASHINGTON OFFICE

23373

CUSTOMER NUMBER

Date: September 13, 2006

From the INTERNATIONAL BUREAU

PCT

NOTIFICATION OF TRANSMITTAL
OF COPIES OF TRANSLATION
OF THE INTERNATIONAL PRELIMINARY REPORT
ON PATENTABILITY
(CHAPTER I OR CHAPTER II
OF THE PATENT COOPERATION TREATY)
(PCT Rules 44bis.3(c) and 72.2)

To:

MIYAZAKI, Teruo
8th Floor, 16th Kowa Bldg.
9-20, Akasaka 1-chome
Minato-ku, Tokyo 1070052
JAPON

JUN - 5, 2006

| | |
|---|--|
| Date of mailing (<i>day/month/year</i>) 26 May 2006 (26.05.2006) | |
| Applicant's or agent's file reference NEC04P162 | IMPORTANT NOTIFICATION |
| International application No. PCT/JP2004/010460 | International filing date (<i>day/month/year</i>) 23 July 2004 (23.07.2004) |
| Applicant NEC LAMILION ENERGY, LTD. et al | |

1. Transmittal of the translation to the applicant.

The International Bureau transmits herewith a copy of the English translation of the international preliminary report on patentability (Chapter I).



The International Bureau transmits herewith a copy of the English translation of the international preliminary report on patentability (Chapter II).

2. Transmittal of the copy of the translation to the designated or elected Offices.

The International Bureau notifies the applicant that copies of that translation have been transmitted to the following designated or elected Offices requiring such translation:

None

The following designated or elected Offices, having waived the requirement for such a transmittal at this time, will receive copies of that translation from the International Bureau only upon their request:

AE, AG, AL, AM, AP, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EA, EC, EE, EG, EP, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OA, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW

3. Reminder regarding translation into (one of) the official language(s) of the elected Office(s).

The applicant is reminded that, where a translation of the international application must be furnished to an elected Office, that translation must contain a translation of any annexes to the international preliminary report on patentability (Chapter II).

It is the applicant's responsibility to prepare and furnish such translation directly to each elected Office concerned within the applicable time limit (Rule 74.1). See Volume II of the PCT Applicant's Guide for further details.

| | |
|---|---|
| The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland | Authorized officer Masashi Honda |
| Facsimile No.+41 22 740 14 35 | Facsimile No.+41 22 338 70 10 |

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

(Chapter I of the Patent Cooperation Treaty)

(PCT Rule 44bis)

| | | |
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| Applicant's or agent's file reference NEC04P162 | FOR FURTHER ACTION | See item 4 below |
| International application No. PCT/JP2004/010460 | International filing date (<i>day/month/year</i>) 23 July 2004 (23.07.2004) | Priority date (<i>day/month/year</i>) 31 July 2003 (31.07.2003) |
| International Patent Classification (8th edition unless older edition indicated) See relevant information in Form PCT/ISA/237 | | |
| Applicant NEC LAMILION ENERGY, LTD. | | |

1. This international preliminary report on patentability (Chapter I) is issued by the International Bureau on behalf of the International Searching Authority under Rule 44 bis.1(a).
 2. This REPORT consists of a total of 5 sheets, including this cover sheet.
- In the attached sheets, any reference to the written opinion of the International Searching Authority should be read as a reference to the international preliminary report on patentability (Chapter I) instead.

3. This report contains indications relating to the following items:

| | |
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| <input checked="" type="checkbox"/> Box No. I | Basis of the report |
| <input type="checkbox"/> Box No. II | Priority |
| <input type="checkbox"/> Box No. III | Non-establishment of opinion with regard to novelty, inventive step and industrial applicability |
| <input type="checkbox"/> Box No. IV | Lack of unity of invention |
| <input checked="" type="checkbox"/> Box No. V | Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement |
| <input checked="" type="checkbox"/> Box No. VI | Certain documents cited |
| <input type="checkbox"/> Box No. VII | Certain defects in the international application |
| <input type="checkbox"/> Box No. VIII | Certain observations on the international application |
4. The International Bureau will communicate this report to designated Offices in accordance with Rules 44bis.3(c) and 93bis.1 but not, except where the applicant makes an express request under Article 23(2), before the expiration of 30 months from the priority date (Rule 44bis .2).

| | |
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| The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland | Date of issuance of this report 15 May 2006 (15.05.2006) |
| Facsimile No. +41 22 740 14 35 | Authorized officer <div style="text-align: center; font-weight: bold;">Masashi Honda</div> Telephone No. +41 22 338 70 10 |

PATENT COOPERATION TREATY

TRANSLATION

From the
INTERNATIONAL SEARCHING AUTHORITY

PCT

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43bis.1)

To:

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| Date of mailing (day/month/year) |
|-------------------------------------|

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|---|---|
| Applicant's or agent's file reference NEC04P162 | FOR FURTHER ACTION See paragraph 2 below |
|---|---|

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|---|---|---|
| International application No. PCT/JP2004/010460 | International filing date (day/month/year) 23.07.2004 | Priority date (day/month/year) 31.07.2003 |
|---|---|---|

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|---|
| International Patent Classification (IPC) or both national classification and IPC |
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| Applicant NEC LAMILION ENERGY, LTD. |
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|--|-------------------------------------|--|----------------------|--------------------------|------------|----------|--------------------------|-------------|--|--------------------------|------------|----------------------------|-------------------------------------|-----------|--|-------------------------------------|------------|-------------------------|--------------------------|-------------|--|--------------------------|--------------|---|
| <p>1. This opinion contains indications relating to the following items:</p> <table style="width: 100%;"> <tr> <td style="width: 10%; text-align: center;"><input checked="" type="checkbox"/></td> <td style="width: 20%;">Box No. I</td> <td>Basis of the opinion</td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td>Box No. II</td> <td>Priority</td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td>Box No. III</td> <td>Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td>Box No. IV</td> <td>Lack of unity of invention</td> </tr> <tr> <td style="text-align: center;"><input checked="" type="checkbox"/></td> <td>Box No. V</td> <td>Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</td> </tr> <tr> <td style="text-align: center;"><input checked="" type="checkbox"/></td> <td>Box No. VI</td> <td>Certain documents cited</td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td>Box No. VII</td> <td>Certain defects in the international application</td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td>Box No. VIII</td> <td>Certain observations on the international application</td> </tr> </table> <p>2. FURTHER ACTION</p> <p>If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.</p> <p>If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.</p> <p>For further options, see Form PCT/ISA/220.</p> <p>3. For further details, see notes to Form PCT/ISA/220.</p> | <input checked="" type="checkbox"/> | Box No. I | Basis of the opinion | <input type="checkbox"/> | Box No. II | Priority | <input type="checkbox"/> | Box No. III | Non-establishment of opinion with regard to novelty, inventive step and industrial applicability | <input type="checkbox"/> | Box No. IV | Lack of unity of invention | <input checked="" type="checkbox"/> | Box No. V | Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement | <input checked="" type="checkbox"/> | Box No. VI | Certain documents cited | <input type="checkbox"/> | Box No. VII | Certain defects in the international application | <input type="checkbox"/> | Box No. VIII | Certain observations on the international application |
| <input checked="" type="checkbox"/> | Box No. I | Basis of the opinion | | | | | | | | | | | | | | | | | | | | | | |
| <input type="checkbox"/> | Box No. II | Priority | | | | | | | | | | | | | | | | | | | | | | |
| <input type="checkbox"/> | Box No. III | Non-establishment of opinion with regard to novelty, inventive step and industrial applicability | | | | | | | | | | | | | | | | | | | | | | |
| <input type="checkbox"/> | Box No. IV | Lack of unity of invention | | | | | | | | | | | | | | | | | | | | | | |
| <input checked="" type="checkbox"/> | Box No. V | Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement | | | | | | | | | | | | | | | | | | | | | | |
| <input checked="" type="checkbox"/> | Box No. VI | Certain documents cited | | | | | | | | | | | | | | | | | | | | | | |
| <input type="checkbox"/> | Box No. VII | Certain defects in the international application | | | | | | | | | | | | | | | | | | | | | | |
| <input type="checkbox"/> | Box No. VIII | Certain observations on the international application | | | | | | | | | | | | | | | | | | | | | | |

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| Name and mailing address of the ISA/JP | Authorized officer |
| Facsimile No. | Telephone No. |

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

International application No.

PCT/JP2004/010460

Box No. 1 Basis of this opinion

1. With regard to the language, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.
☐ This opinion has been established on the basis of a translation from the original language into the following language
_____, which is the language of a translation furnished for the purposes of international search (under Rule 12.3 and 23.1(b)).
2. With regard to any nucleotide and/or amino acid sequence disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:
 - a. type of material
☐ a sequence listing
☐ table(s) related to the sequence listing
 - b. format of material
☐ in written format
☐ in computer readable form
 - c. time of filing/furnishing
☐ contained in the international application as filed.
☐ filed together with the international application in computer readable form.
☐ furnished subsequently to this Authority for the purposes of search.
3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table(s) relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
4. Additional comments:

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

International application No.

PCT/JP2004/010460

| Box No. V | Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement | | |
|--|--|-----|-----|
| 1. Statement | | | |
| Novelty (N) | Claims | 1-5 | YES |
| | Claims | | NO |
| Inventive step (IS) | Claims | | YES |
| | Claims | 1-5 | NO |
| Industrial applicability (IA) | Claims | 1-5 | YES |
| | Claims | | NO |
| 2. Citations and explanations: | | | |
| <p>[List of documents] The following documents are all cited in the ISR.</p> <p>✓ 1. JP 2003-187781 A (Sony Corporation), 04 July 2003 Claims 1-13, embodiments and drawings (Family: none)</p> <p>✓ 2. JP 2002-252036 A (Mitsubishi Materials Corporation), 06 September 2002 Claims 1-5, embodiments and drawings (Family: none)</p> <p>✓ 3. JP 2002-251989 A (Mitsubishi Materials Corporation), 06 September 2002 Claims 1-5, embodiments and drawings (Family: none)</p> <p>✓ 4. JP 8-273702 A (Hitachi, Ltd.), 18 October 1996 Claim 1, paragraphs 0008 and 0015, embodiments etc. & EP 729194 A2 & US 6083645 A</p> <p>✓ 5. JP 2003-208895 A (Toyota Central Research Laboratories, Inc.), 25 July 2003 Claims 1-5, paragraph 0002, embodiments etc. (Family: none)</p> <p>✓ 6. JP 2003-217594 A (Nissan Motor Co., Ltd.), 31 July 2003 Claims 1-3, paragraph 0002, embodiments etc. (Family: none)</p> <p>✓ 7. JP 2002-352863 A (NGK Insulators, Ltd.), 06 December 2002 Claims 1-14, embodiments etc. & EP 1244170 A2 & US 2002/136944 A1</p> <p>✓ 8. JP 2003-187857 A (Nissan Motor Co., Ltd.), 04 July 2003 Claims 1-17, entire specification & EP 1326294 A2 & US 2003/113621 A1</p> <p>[Explanations]</p> <p>The inventions of claims 1-5 do not appear to involve an inventive step based on the descriptions in documents 1-8. Documents 1-3 respectively describe, regarding a lithium ion secondary cell that assumes a large capacity use such as an electric vehicle application or the like, a laminated battery comprising a terminal board with a width close to the width of an electrode collecting plate. Documents 1-3 do not specifically indicate output, active matter average particle diameter, active matter layer thickness, terminal board shape, and cooling of a terminal; however, output can be naturally satisfied due to a large capacity of an electric vehicle; therefore, the range of the active matter average particle diameter and active matter layer thickness limited therein are merely well-known range as a large capacity battery as described in documents 4-6, and cooling mechanism of a large capacity battery is a merely well-known matter including the necessity thereof as described in documents 7 and 8. Also, regarding the shape, the degree of expanding other portions while maintaining a certain width of the narrowest portion is a mere matter that could be conceived of as appropriate by a party skilled in the art.</p> | | | |

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

International application No.

PCT/JP2004/010460

Box No. VI Certain documents cited

1. Certain published documents (Rule 43bis.1 and 70.10)

| Application No. Patent No. | Publication date (day/month/year) | Filing date (day/month/year) | Priority date (valid claim) (day/month/year) |
|-------------------------------|--------------------------------------|---------------------------------|---|
| JP 2003-229117✓A E, X | 15.08.2003 | 01.02.2002 | |
| JP 2003-346798✓A E, X | 05.12.2003 | 24.05.2002 | |
| JP 2003-338275✓A E, X | 28.11.2003 | 21.05.2002 | |
| JP 2004-47161✓A E, X | 12.02.2004 | 09.07.2002 | |
| JP 2004-79481✓A E, X | 11.03.2004 | 22.08.2002 | |

2. Non-written disclosures (Rule 43bis.1 and 70.9)

| Kind of non-written disclosure | Date of non-written disclosure (day/month/year) | Date of written disclosure referring to non-written disclosure (day/month/year) |
|--------------------------------|--|---|
|--------------------------------|--|---|